Space Weather Forecast

Issued on Tuesday 22 October 2024 at 13:09 Local

This forecast provides a four-day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: Early chance of G1/Minor Geomagnetic Storms. Increasing chance of radio blackouts this week.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Activity was low and confined to Common-class flares.

There are nine numbered sunspot regions on the visible disc. AR3859 in the southwest, has shown areal decay in the peripheral spots surrounding the main leader. AR3863 in the southeast saw minor simplification and decay in it's trailing portion. All other spots are small or simple.

A filament eruption was observed in centre disk around 22/0500UTC but no coronal mass ejection has yet been identified. No other Earth-directed Coronal Mass Ejections were in evidence in the period.

Solar Wind / Geomagnetic Activity: Solar winds were indicative of a slow regime. The solar wind speed was at slow-ambient levels. The interplanetary magnetic field was at Background levels, but with a rising trend after 22/0330UTC, with the north-south component weakly negative and positive. The net result of the above solar wind measures was Quiet to Unsettled (Kp 0-2).

Energetic Particles / Solar Radiation: No solar radiation storms were observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Activity is likely to be low, with a chance of moderate activity from isolated Moderate-class flares initially. Activity is then likely to increase through the period, with the return of several notable active regions over the eastern solar horizon: probably becoming Moderate from midweek UTC.

Solar Wind / Geomagnetic Activity: There are no Earth-directed coronal mass ejections in the forecast. A fast wind regime may become established from a western 'coronal hole' within the current UTC day, with a chance of peak Minor geomagnetic storm (G1) conditions, before activity declines to mainly quiet levels after midweek UTC.

Energetic Particles / Solar Radiation: No solar radiation storms are expected.

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 370 900 0100 Email: enquiries@metoffice.gov.uk

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Geomagnetic Storms

Geomagnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	40	25	1	1
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X-Ray Flares

X-Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 (M Class)	No	30	40	60	60
Very Active	R3-R5 (X Class)	No	5	10	10	10

Solar Radiation Storms (High Energy Protons)

Radiation Storms Probability (Exceedance)	Level ($cm^{-2}sr^{-1}s^{-1}$)	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	5	5	5	5
Very Active	≥ S3 *	No	1	1	1	1
* S3 ≥ 10 MeV ≥ 1000 pfu and/or 50 MeV ≥ 10pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)						

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